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Culture of Hardy Chrysanthemums



Colprit's Nursery, Dover, N. H.

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Several years ago, because of repeated disappointment with the hardiness and blooming season of existing "hardy chrysanthemums," we began breeding experiments which have had quite satisfactory results to date. Selecting an extremely dwarf and early blooming type of *Chrysanthemum Articum* as the seed plant we used upon it the pollen of various korean hybrids and other early mums such as *amelia*.

At first results were not startling. The *Articum* strain, being pure, was strongly dominant and early hybrids showed little variation. There was a temptation to use great infusions of hortorum blood in order to rapidly perfect new varieties. However, as it was our object to produce hardier and earlier blooming varieties for Northern New England, we stuck to a program of breeding from the *Articum* side only and rigidly culling the progeny. Accordingly these early hybrids were either selfed or interbred in order that latent characters might be brought out.

Each year about three thousand seedlings are raised. These plants are wintered in the open field without protection. From those that survive this rigorous treatment about a half dozen plants are selected for earliness and quality of bloom. A slow, but steady, improvement has been noted from year to year. Varieties thus produced almost invariably have good foliage, are compact, requiring little, if any pinching, and are extremely floriferous.

During the past three years these hybrids or New Hampshire Mums, as we call them, have been exhibited at the Massachusetts Horticultural Society shows in Horticultural Hall, Boston. Our exhibit in 1941 attracted considerable attention because of the brilliant color and unique habit of these varieties. We were proud to receive an Award of Merit on our most recent introduction, the variety "Cocheco." An admirable pot or bedding plant, Cocheco is a brilliant pink in color and the small tufted

double blooms are produced so profusely that it is impossible to insert a finger in the top of the plant without touching a bloom. We do not propose to put this variety on the market until 1943. Watch for it at the fall flower shows.

Each fall many people visit our Chrysanthemum Display beginning in mid-September and lasting for about a month. We are located just off Route 108, between Dover and Durham. Here you will see, laid out on an expanse of lawn, beds of many varieties of chrysanthemums, including new hybrids which are being tested prior to introduction. It is a very colorful scene and the delight of color photography fans. At one side is a fine old pine grove. Beautiful blue spruces and other trees and shrubs form the background. We cordially invite you to visit this garden which we have prepared for you.

CHRYSANTHEMUM CULTURE

Hardy Chrysanthemums are not difficult plants to grow as they have few diseases and insect pests. They will even endure extremes of drought and rainfall. However, this does not mean that they will produce satisfactory results when grossly neglected. Because chrysanthemum plants are small when received it is a common mistake to crowd them into small spaces between other plants. They should have plenty of room. A space fifteen to eighteen inches square is none too large and even twenty-four inches may be allowed for vigorous growing varieties.

The bed should be spaded deeply and a liberal amount of barnyard manure thoroughly worked into the soil. It is also advisable to apply acid phosphate at this time at the rate of 10 pounds of 20% superphosphate per 100 square feet. For single plants a tablespoonful will be sufficient. This phosphate is quite important as it not only stimulates rootgrowth but strengthens the stems and induces early blooming. Lack of phosphorus is often indicated by a yellowing of the leaves which may continue until only the ribs and adjacent portions are still green.

If the leaves yellow at the tips and become thin and wilted when plenty of moisture is present, a lack of nitrogen is indicated. Thrifty leaves should be of good substance and with most varieties should be crisp almost to the point of brittleness. Nitrogen may be supplied by watering with a solution composed of one ounce of Ammonium Sulphate in 2 gallons of water. Application of some complete fertilizer such as 4-8-4 or 5-8-7 at the

rate of 2 pounds per 100 square feet at intervals during the growing season pays good dividends but should be discontinued when the plants begin to bud. Single plants should receive a teaspoonful well mixed with the surface soil.

Chrysanthemums seem to do well in soil that is somewhat on the acid side but if the foliage appears leathery and has considerable red or purplish coloration the use of lime will probably prove beneficial. If the surface soil about the plants is kept well cultivated chrysanthemums will stand considerable dry weather but if water can be supplied when buds begin to appear the bloom will be much larger. A peat moss mulch about an inch in thickness also gives good results on light soil. In heavy soils the peat moss may better be incorporated in the soil.

In wet weather, when heavy or poorly drained soils are water-soaked, symptoms of lack of phosphorus or nitrogen may be observed because of the inability of the plant to utilize these elements under such conditions. A garden fork may be inserted under the root system of the plant so as to slightly raise it without entirely breaking the lateral roots. A few cinders or coal ashes about the plant will also be a help.

Many varieties of chrysanthemums are tall growing and, if allowed to grow unrestrained, produce small clusters of blooms on ungainly stems. Such kinds should be pinched back two or three times during the growing season, beginning as soon as they reach a height of five or six inches. In this way compact, bushy plants are formed which are smothered with blooms. The cushion mums and many of the newer varieties grow naturally bushy and require no pinching.

Best results are obtained if plants are taken up each spring and divided. This allows thorough preparation of the bed and the reset plants are more vigorous than the old clumps. Commercial growers use only rooted cuttings to produce blossoms of exhibition quality so do not be afraid to divide into small pieces.

Even varieties that are hardy to extremely low temperatures may not live over winter in your garden if soil conditions are not right. If you have difficulty wintering chrysanthemums in the open, the plants may be taken up with as much soil as will cling to the roots and bedded close together in a cold frame. A cool cellar, if not too dry, is satisfactory storage or even an unheated building if too much alternate freezing and thawing does not occur.